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Cultural Resources Survey of the Grapevine Creek Bank Stabilization Project, City of Coppell Dallas County, Texas

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CULTURAL RESOURCES REPORT

Cultural Resources Survey of the Grapevine Creek Bank Stabilization Project, Dallas County, Texas

Prepared for:
Texas Historical Commission
Texas Antiquities Permit #8046

TEXAS HISTORICAL COMMISSION
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On Behalf of:

City of Coppell

THE · CITY · OF
COPPELL
TEXAS · 1890

August 2017

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Cultural Resources Survey of the Grapevine Creek Bank Stabilization Project, City of Coppell Dallas County, Texas

by

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&

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Submitted to:

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Cultural Resources Report
August 2017

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ABSTRACT

This report documents the substantive findings and management recommendations of a cultural resource inventory conducted by Integrated Environmental Solutions, LLC (IES) for the Grapevine Creek Bank Stabilization Project, Dallas County, Texas. As the City of Coppell is a political subdivision of the State of Texas, the proposed project will require coordination with the Texas Historical Commission (THC) prior to construction, per the provisions of the Antiquities Code of Texas (ACT). In addition, as the project will require a Section 404 of the Clean Water Act (CWA) Nationwide Permit (NWP) 13 from the U.S. Army Corps of Engineers (USACE), portions of the project will be subject to the provisions of the National Historic Preservation Act (NHPA) of 1966, as amended.

The goal of the survey was to locate, identify, and assess any cultural resources that could be adversely affected by the proposed project, and to evaluate such resources for their potential eligibility for listing as a State Antiquities Landmark (SAL) or eligibility for listing in the National Register of Historic Places (NRHP).

The cultural resources inventory was conducted by archeologist Anne Gibson on 06 June 2017, under Texas Antiquities Permit No. 8046. During the IES survey, no cultural resources were encountered within the 0.30-acre Area of Potential Effects.

No artifacts were collected as part of this survey. All records will be temporarily curated at the IES McKinney office and permanently curated at the Texas Archeological Research Laboratory (TARL). No further work is warranted. However, if any cultural resources are unearthed during construction, the operators should stop construction activities, and immediately contact the project environmental representative to initiate coordination with the THC prior to resuming any construction activities.

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CHAPTER 1: PROJECT DESCRIPTION

This report has been written in accordance with the guidelines for reports prepared by the Council of Texas Archeologists (CTA 2002). The report presents a brief description of the project area or Area of Potential Effects (APE), environmental setting and methodology; followed by the results of the investigations and recommendations. This report serves as the cultural resources report to satisfy the Antiquities Code of Texas (ACT).

1.1 Introduction

As the project cultural resources consultant for Teague Nall and Perkins, Inc., Integrated Environmental Solutions, LLC (IES) performed a cultural resources inventory for the City of Coppell Grapevine Creek Bank Stabilization Project. The 0.30-acre project area or APE was located southwest of the intersection of Denton Tap Road and West Bethel Road in Dallas County, Texas. The project was plotted on the Carrollton 7.5-minute series U.S. Geological Survey (USGS) Quadrangle sheet and recent aerial photograph (**Figures 1.1** and **1.2**). The goal of the survey was to locate, identify, and assess the APE for previously unrecorded archeological sites, and to evaluate any such resource for potential eligibility as a State Antiquities Landmark (SAL) or National Register of Historic Places (NRHP) listing. All work was conducted in accordance with 13 Texas Administrative Code (TAC) 26, and with 36 Code of Federal Regulations (CFR) 60.4, which outline the regulations for implementing the ACT and Section 106, respectively.

1.2 Area of Potential Effects

1.2.1 *Direct APE*

The direct APE encompassed an approximate 0.30-acre area. Current plans call for the stabilization of an embankment located along Grapevine Creek approximately 500 feet southeast of the intersection of Penfolds Lane and West Bethel Road. The project will consist of upgrading the existing sakrete retaining walls at the top of the bank to a tiered gabion wall with earthen anchors covering the face of the bank. The wall measured between 10 to 30 feet in height and approximately 110 feet in length. The proposed wall consist of a crushed stone base, grouted rock rip-rap at water elevation, stacked gabion baskets, and tie-back earthen anchors. The anchors will be situated horizontally at different elevations behind the wall and will range in length from 18 to 21 feet. At the top of the bank, the existing retaining walls and several mature trees will be removed. Although vertical impacts associated with the bank stabilization will range between approximately 10 to 30 feet in depth.

To conduct the proposed bank stabilization, an approximate 465-foot long temporary access road will be utilized to provide construction access from Lexington Avenue. A temporary low-water crossing will be built as part of the access road to facilitate the crossing of Grapevine Creek. Since the vertical limits within the proposed access road will be relatively shallow and limited to vehicular traffic, it was determined that backhoe trenching would not be required to assess the vertical extent of the access road.

1.2.2 *Indirect APE*

As the project required a federal permit from the U.S. Army Corps of Engineers (USACE), indirect visual effects were considered to satisfy Section 106 of the National Historic Preservation Act (NHPA). Although elements of the project will remain above ground, these elements will have minimal vertical footprints and determined to have negligible potential to have an adverse effect on non-archeological cultural resources. As such, indirect effects were not assessed for this project.

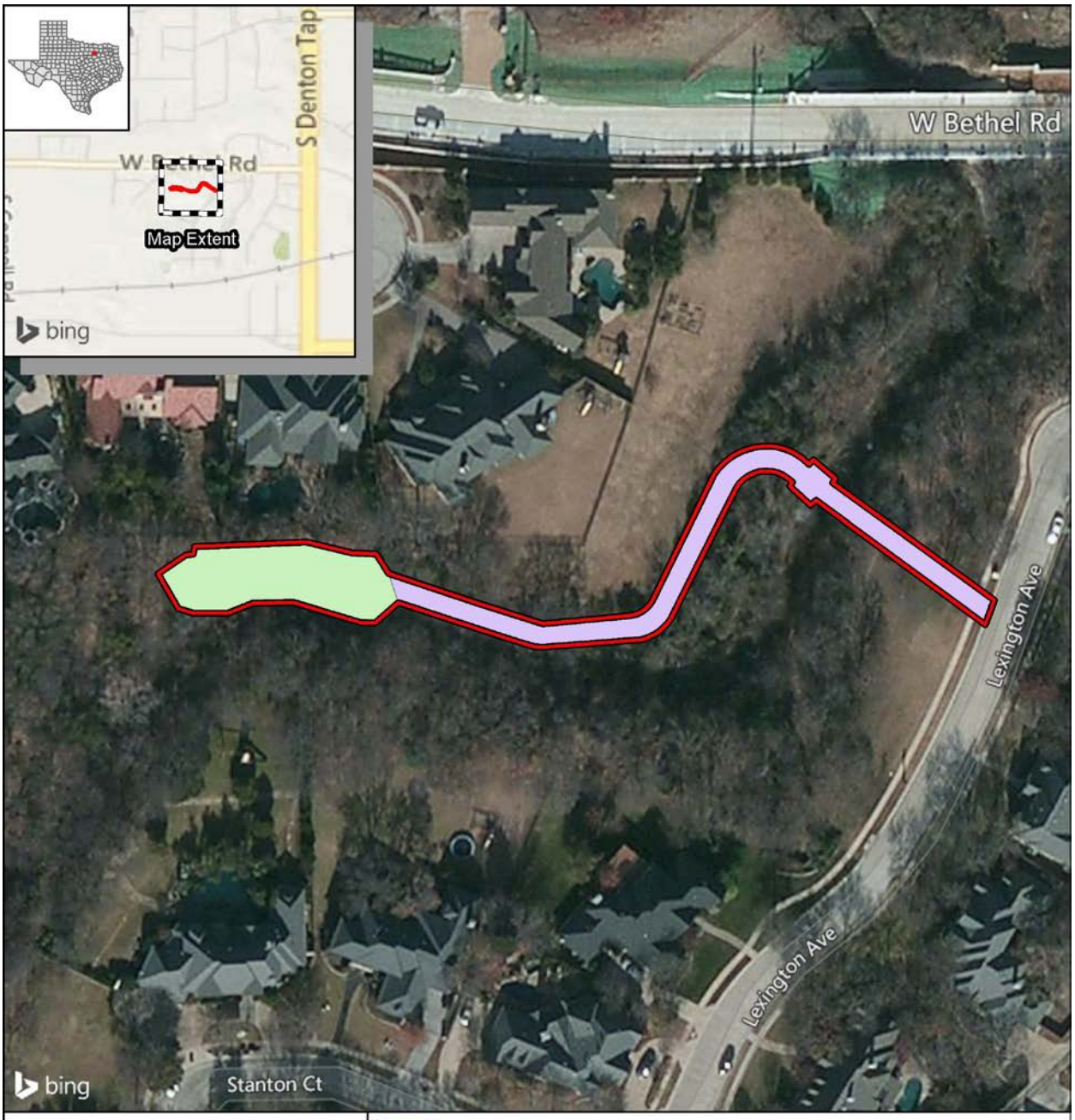

Figure 1.1
General Location Map

County: Dallas
State: Texas
Date map created: 6/13/2017
Source: (c) 2009 Microsoft Corporation and its data suppliers; ESRI 10.5 Streetmap

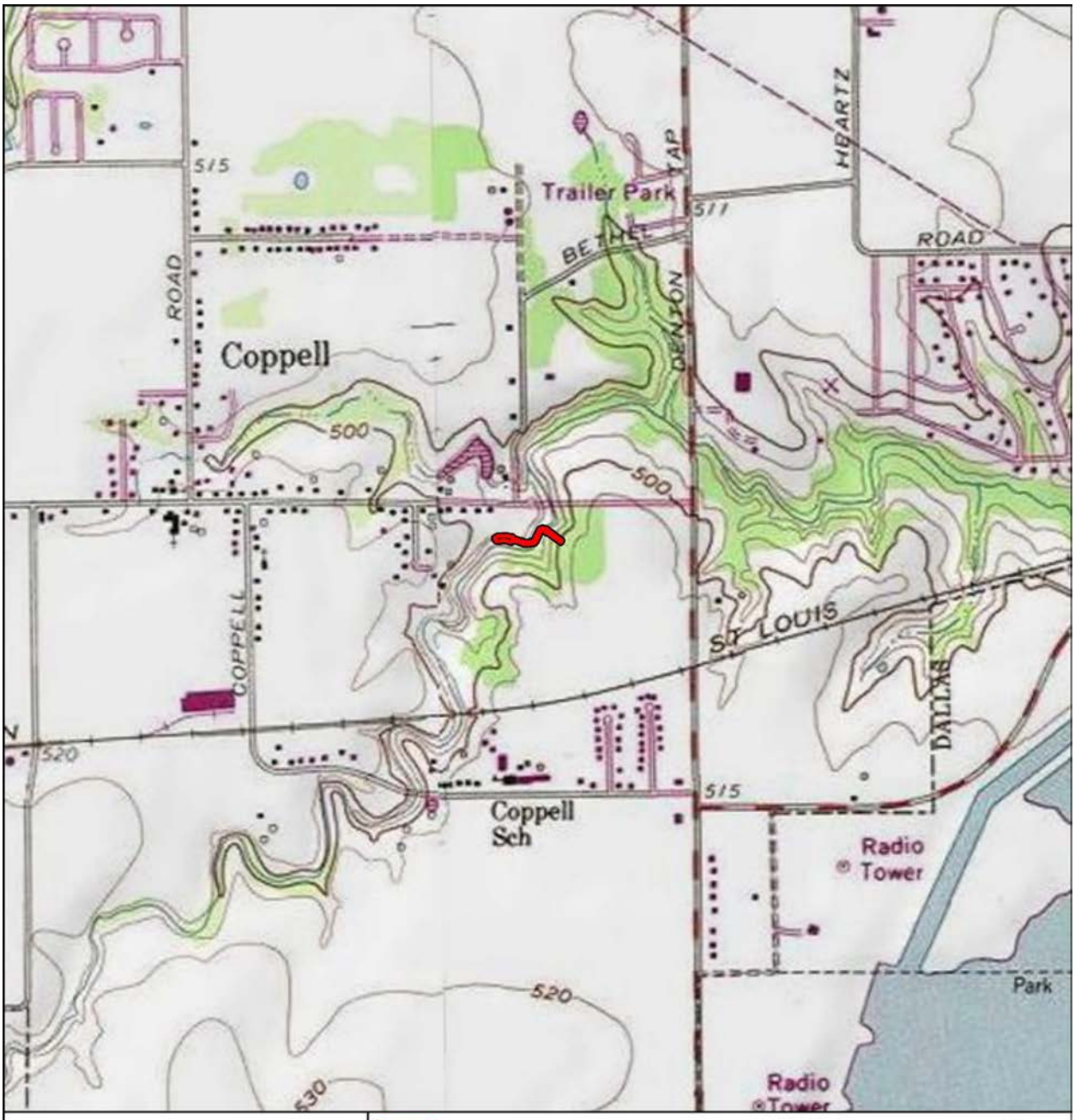

Figure 1.2
Topographic Setting

County: Dallas
State: Texas
Date map created: 6/12/2017
Source: USGS Topographic Map
7.5' Quadrangle
Carrollton 1982

1.3 Administrative Information

Sponsor: City of Coppell

Review Agency: Texas Historical Commission

Principal Investigator: Kevin Stone, MA, RPA

IES Project Number: 04.080.042

Days of Field Work: 06 June 2017

Area Surveyed: Approximately 0.30 acre

Sites Recommended as Eligible for National Register Listing Under Criteria in 36 CFR 60.4:

None

Sites Not Recommended as Eligible for National Register Listing Under Criteria in 36 CFR 60.4:

None

Curation Facility: No artifacts were collected. Field notes and all records will be temporarily curated at the IES office in McKinney and permanently curated at TARL.

CHAPTER 2: ENVIRONMENTAL BACKGROUND

2.1 Environmental Setting

2.1.1 *Climate*

Dallas County is in the north-central part of the state of Texas. This region has a humid subtropical climate and an annual rainfall averaging between approximately 35.01 to 40.00 inches. About half of the rain usually falls between April and May, with July and August being the two driest months of the year. The subtropical region tends to have a relatively mild year-round temperature with the occasional exceedingly hot and cold snaps (Estaville and Earl 2008).

2.1.2 *Topographic Setting*

The USGS Carrollton 7.5' Quadrangle map illustrates that the APE is located along the banks of Grapevine Creek (*see* **Attachment A, Figure 1.2**). The APE was located relatively high within the creek's watershed. Upstream and downstream from the APE, the creek was steeply sloped and had no definable floodplain. The majority of the topography within the APE was steeply sloped because the APE is located within and directly adjacent to Grapevine Creek. However, there were several isolated areas with a more gently sloping topography were that present adjacent to the creek near the residences along Rosemont Court and Lexington Avenue. The creek within the APE is deeply incised into the natural bedrock and with its normal water surface level being more than 25 feet below the creek's top of bank. On the rare occasion floodwater exceeds a bankful event; the event would be a high velocity flood and not conducive for developing thick alluvial horizons. The creek's valley floor becomes markedly wider approximately 0.70 mile downstream from the APE. The wider valley floor, downstream from the APE, provides a setting much more favorable for containing deep alluvial deposits.

2.1.3 *Geology and Soils*

The APE is located within the Northern Blackland Prairie of the Texas Blackland Prairie ecoregion. This area is distinguished from surrounding regions by the gently rolling hills and fine-textured, black clayey soils with predominant prairie vegetation (Griffith et al. 2007). Vertisols dominate the Blackland Prairie ecoregion and consist of high content clay that has great shrinking and swelling potential. The Eagle Ford Formation (Kef) underlies these soils, which is the westernmost and oldest geological group within the Blackland Prairies (**Figure 2.1**) (McGowen et al. 1987). This formation dates to the late Cretaceous and is comprised of sedimentary rock consisting of shale, siltstone, and limestone, which grades upward into highly plastic clay (Coffee 1980, McGowen et al. 1987, USGS 2017).

According to the *Soil Survey of Dallas County, Texas* (Coffee 1980) and U.S. Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS) web soil survey data for Dallas County (Web Soil Survey 2017), the APE contains Silawa fine sandy loam, 3 to 8 percent slopes (**Figure 2.2**). This soil series is generally characterized as well drained, fine sandy loam located on stream terraces. Depth to a root restrictive layer or bedrock is more than 80 inches

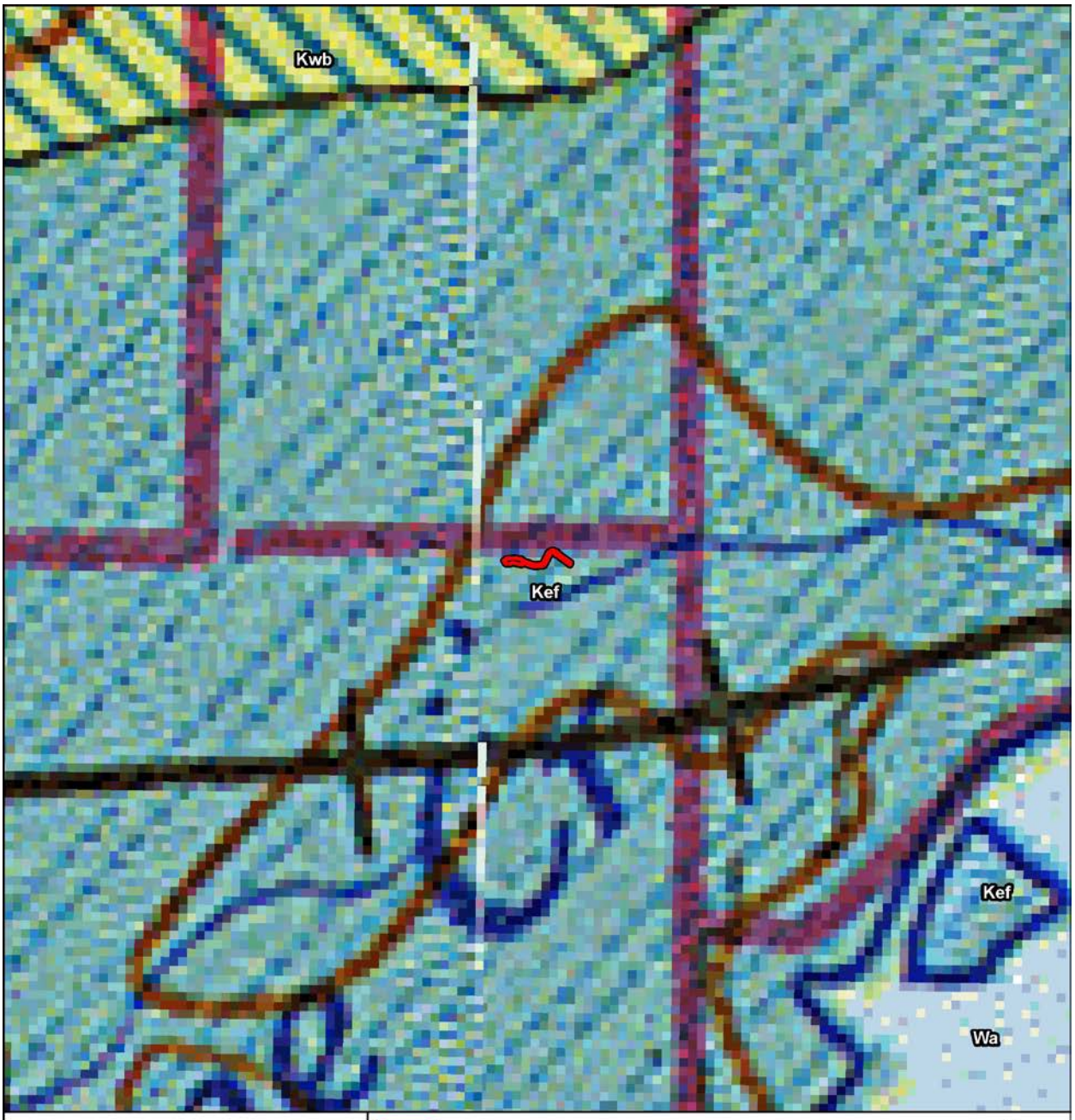

Figure 2.1
Geologic Setting

County: Dallas
State: Texas
Date map created: 6/12/2017
Source: TNRIS Geologic Atlas of Texas; Dallas Sheet

Area of Potential Effects

Geologic Formation

Kef, Eagle Ford Formation

Kwb, Woodbine Formation

Wa, Water

N
W E
S

1 inch = 1,000 feet

0 1,000 2,000 3,000 Feet

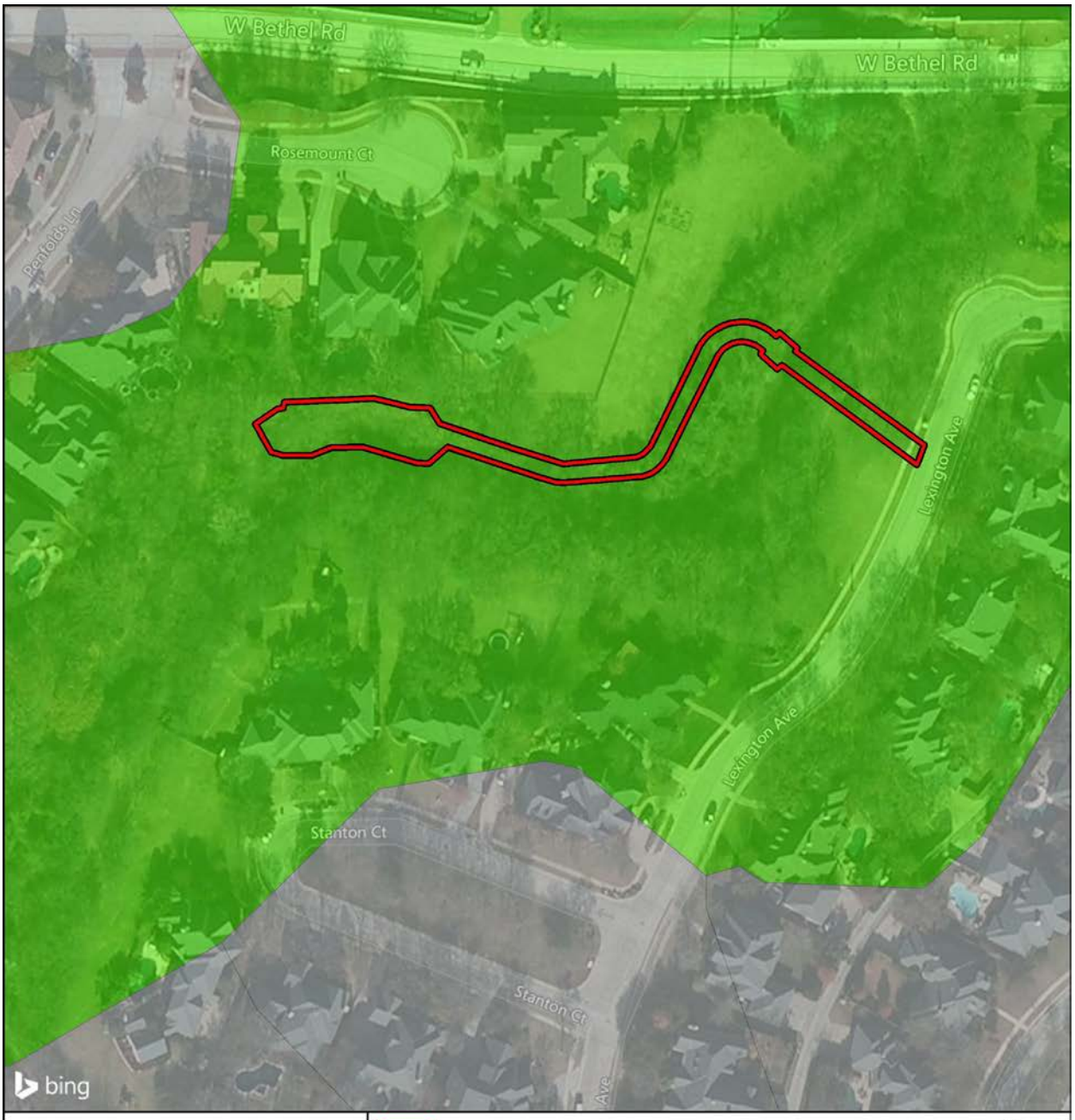

Figure 2.2
Soil Map Units Located Within and Adjacent to the APE

County: Dallas
State: Texas
Date map created: 6/12/2017
Source: 2007 USDA
NRCS Digital Soils Database

Area of Potential Effects

Soil Description

61 - Silawa fine sandy loam, 3 to 8 percent slopes

Other Values

N
W E
S

1 inch = 100 feet

0 100 200 300 Feet

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CHAPTER 3: CULTURAL BACKGROUND

3.1 Previous Investigations

A file search within the Texas Archeological Sites Atlas (TASA) database, maintained by the THC, identified that there are no previously recorded archeological sites, National Register Properties, historical markers, or cemeteries located within or directly adjacent to the proposed APE (TASA 2017). In 1992, an archeological survey was conducted by the Dallas Archeological Society (DAS) within a 640-acre area bounded by Denton Tap Road, Coppell Road, Bethel Road, and the St. Louis Southwestern Railroad. The focus of the survey was Grapevine Springs Park (41DL329), a 12-acre park created by the Works Progress Administration (WPA) in the 1930s that contained a mixture of prehistoric materials and historic-period artifacts and features. During the DAS survey, test units were excavated in the remaining 628 acres, which included the APE. However, since neither the testing locations nor data collected from these test units were presented within the 1994 report it is unclear if the current APE was properly assessed by this past survey (**Figure 3.1**). In the TASA, only the survey area within the park is illustrated. See **Table 3.1** for information of all known surveys within one-mile of the APE. According to the TASA database, five previously recorded archeological sites were located within one mile (~1,600 meters [m]) of the APE (**Table 3.2**).

Table 3.1: Previous Archeological Surveys within One-Mile of the APE.

Agency	ACT* Permit No.	Firm/Institution	Date	Survey Type	Location (Approximate)
City of Coppell	2290	AR Consultants, Inc. (ARC)	2000	Area	0.12-mile east of the APE
City of Coppell	4513	ARC	2007	Area	0.13-mile southeast of the APE
City of Coppell	7111	ARC	2014	Area	0.14-mile west of the APE
City of Coppell	7520	IES	2016	Area	0.12-mile southeast of the APE

*ACT=Antiquities Code of Texas

Table 3.2: Recorded Archeological Sites within One-Mile of the APE

Site	Time Period	Site Type	Site Size (ft)	Depth Extent	Cultural Materials	Topographic Setting	Reference
41DL34	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
41DL309	Prehistoric	Artifact Scatter	Unknown	Unknown	Broken cobbles, one biface	Upland Ridge	Lorrain 1990
41DL312	Historic	Old drugstore	Unknown	0-20	Bottle glass, earthenware, metal, plate glass	Broad Upland Ridge	Lorrain 1990
41DL329	Prehistoric/ Historic	WPA Park	300 x 183	0-30	Stone work features, ceramics, nails, glass, flakes, arrow preform	Upland Ridge and Stream Terrace	Lorrain 1992, Gibson 2016
41DL330	Prehistoric	Lithic Scatter	150 x 200	Unknown	Cores, flakes, point fragment	Stream Terrace	Lorrain 1990

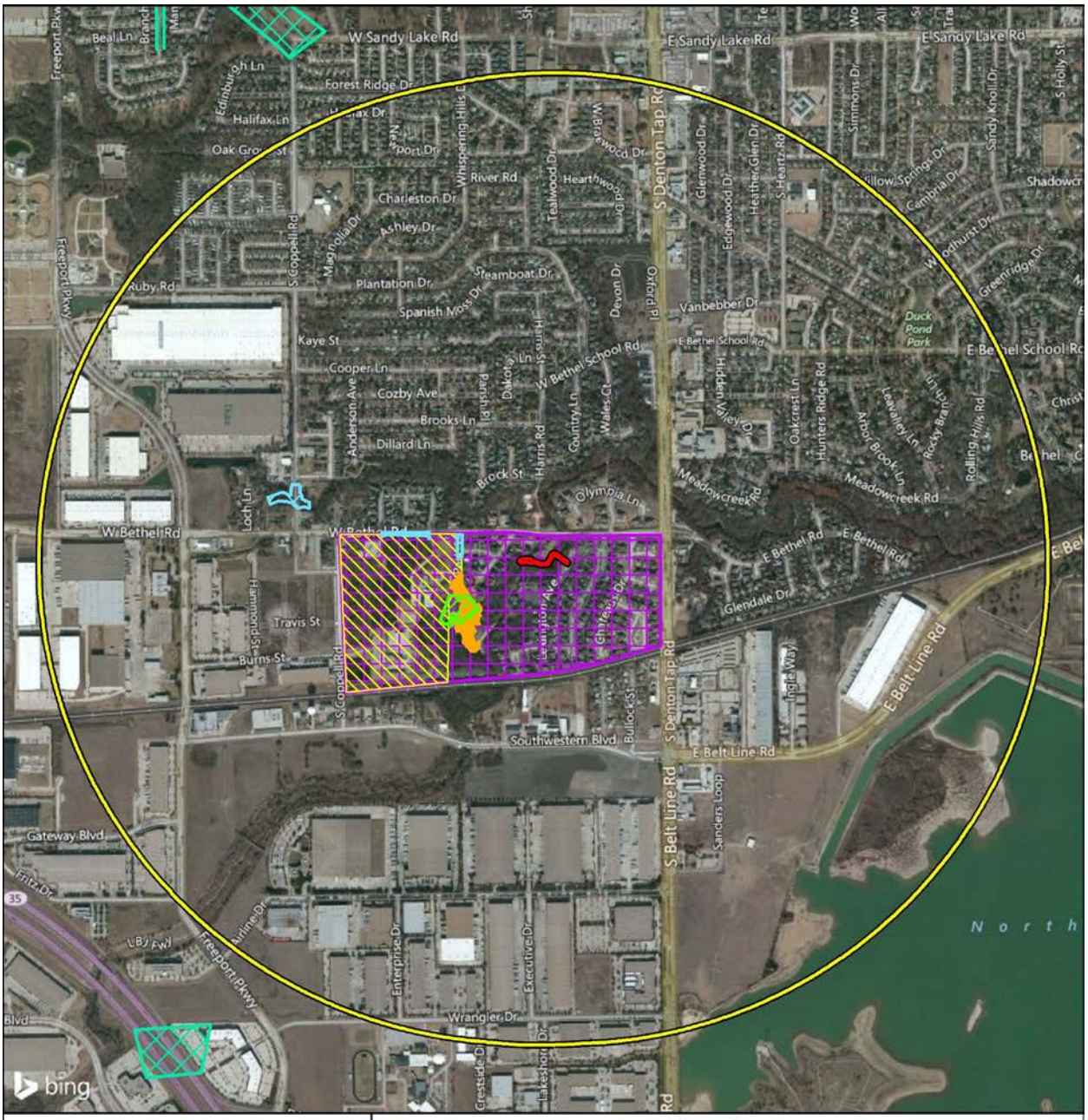

Figure 3.1
Previous Investigations Within One-Mile of the APE

County: Dallas
State: Texas
Date map created: 6/12/2017
Source: (c) 2009 Microsoft Corporation and its data suppliers; ESRI 10.5

Previous Archeological Survey

- City of Coppell 2000
- City of Coppell 2007
- City of Coppell 2014
- City of Coppell 2016
- DAS 1992

- Area of Potential Effects
- APE One-Mile Buffer

N W E S

1 inch = 1,400 feet

0 1,400 2,800 4,200 Feet

3.2 Cultural Resources Potential

In addition to the TASA review, several additional sources were referenced to determine the overall potential for encountering cultural resources within the APE. These sources included the *Soil Survey of Dallas County, Texas*, the Geologic Atlas of Texas, Dallas Sheet, the USGS topographic map, the NRCS digital soil database for Tarrant County, the Predictive Archeological Liability Map (PALM), the National Archives and Records Administration's (NARA) 1940 Census Enumeration District Maps for Dallas County, the Texas Historic Overlay (THO) georeferenced maps, and both past and current aerial photography.

3.2.1 *Prehistoric Resource Potential*

Previous surveys in the North-Central Texas region have indicated that the majority of prehistoric sites are located along major perennial streams or near springs. The PALM for the Dallas District Texas Department of Transportation (TXDOT) indicates that the majority of the APE features a high potential for containing shallow cultural materials and a low potential for deeply buried deposits within a reasonable context. The remaining portion of the APE featured a moderate to high potential for containing shallow resources and a low to moderate potential for deeply buried cultural materials. Through background research, it was determined the APE has retained a reasonable context and that there is a moderate to high potential for prehistoric cultural materials. The moderate to high probability illustrated within the PALM was supported by the presence of prehistoric sites located within similar topographic settings upstream and downstream of the APE along Grapevine Creek

3.2.2 *Historic-Period Resource Potential*

Historic-period cultural resources within North-Central Texas are primarily related to farmsteads, houses, and associated outbuildings and structures that date from the mid-19th to the mid-20th centuries. Typically, these types of resources are located along old roadways, but can be located along railroads, creeks, and open pastures. Although determining the presence of the earliest of these buildings and structures were problematic, thorough and accurate maps depicting these features were widely available post-1924.

No historic-aged resources were identified within or directly adjacent to the APE on the referenced historical aerial photography and maps. As such, the potential for historic-age resources to be affected by the proposed undertaking is low.

3.2.3 *Disturbance Analysis*

Historical aerial photography and maps illustrated that the majority of the APE has remained undeveloped as early as 1953. A 1925 topographic map indicates that the course of Grapevine Creek through the APE has not been altered to present day. The land adjacent to the APE was used for agricultural or pastoral purposes throughout the 20th century. An aerial photograph dating to 1958 depicts the APE included a mix of riparian forest and the southern part of an agricultural field. In the 1960s, trees and underbrush were removed from the south side of the creek, which was used for pastoral or ranching purposes until the mid-1970s. Between the mid-1970s and 1979, secondary woody vegetation reclaimed the area. Between 1995 and 2001, several residential developments were constructed north and south of the APE, but did not directly impact the creek bank within the APE.

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CHAPTER 4: METHODOLOGY

The archeological inventory for the Grapevine Creek Bank Stabilization Project was conducted on 06 June 2017. The methods and density of excavating shovel tests met the minimum requirements for field operations stipulated by the THC and CTA Archeological Survey Standards for Texas. Prior to field work, the IES staff conducted a historical and archeological records search to determine what cultural resources have been recorded within the APE and within a one-mile radius of the APE. This information was detailed above. Additionally, IES staff reviewed ecological, geological, soils data, as well as, historical and recent topographic maps and aerial photography.

4.1 Survey Methods

The 100 percent intensive pedestrian survey consisted of a careful examination of the ground surface and existing subsurface exposures for evidence of archeological sites within the APE. The survey consisted of a single transect that was located within the center of the proposed access road and bank stabilization area. Areas displaying high levels of disturbance were photographed to document the lack of potential for intact archeological deposits. Other documentation methods included narrative notes, maps, and shovel test records.

4.2 Shovel Testing

In areas with potential for archeological materials, shovel tests were excavated to 80 centimeters (cm) or the bottom of culturally sterile deposits, whichever was encountered first, unless otherwise specified. Each shovel test was 30 cm in diameter and was hand excavated in natural stratigraphic levels not exceeding 20 cm in thickness. Excavated soil was screened using ¼-inch hardware cloth to test for the presences of buried cultural material. All tests were recorded on maps and plotted using hand-help Global Positioning System (GPS) units. Investigators documented the results of each test on standardized shovel test forms. According to the Archeological Survey Standards of Texas, an APE with an area of 0.30 acre, displaying little to no disturbance, should have approximately three shovel tests (three shovel tests per acre) excavated during the pedestrian survey. However, shovel test numbers varied based on the amount of disturbance present within the APE. All positive shovel tests, cultural features, and other site data were geospatially recorded using Trimble Geo XT handheld GPS unit.

Standards for archeological methods require that measurements be recorded in metric units. For this reason, while general distances and engineering specifications are described in feet or miles within this report, archeological measurements and observations are listed in meters or centimeters, unless artifact diagnostic elements must be presented within Imperial unit measurements.

4.3 Curation

The survey employed a non-collection strategy. Records, files, field notes, forms, and other documentation will be included in the curation package. All field-generated documents will be temporarily curated at the IES office and permanently curated at TARL. These documents and photographs will be organized and catalogued according to TARL curation standards.

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CHAPTER 5: RESULTS

During the survey, four shovel tests were excavated within the 0.30-acre area inventoried for cultural resources. A photograph location map and photographs are located in **Appendix A**.

5.1 Pedestrian Survey Observations and Shovel Testing

During the survey, IES archeologist excavated four negative shovel tests during the 100 percent survey (**Figure 5.1**). Through the survey, disturbances resulting from residential development and severe bank erosion were observed along Grapevine Creek (**Appendix A, Photographs 01** through **15**). Although the area where bank stabilization will occur is depicted within Figure 5.1 as wider than the temporary access road, the vast majority of this area was located within the creek's near vertical cutbank and channel, which left only a thin sliver of ground between the creek and the APE boundary (**Appendix A, Photograph 5**). As a result, there were only a few areas within the APE suitable for shovel testing. The majority of the APE had little surface visibility due to dense leaf foliage and thick underbrush vegetation (**Appendix A, Photographs 16** through **18**). Soils in the western part of the APE were disturbed by previous bank stabilization projects and residential development adjacent to the APE. During the survey, shale bedrock was identified within the creek cutbank at approximately six to eight feet below the natural ground's surface within several locations within the APE. The observed depth of bedrock in combination with the steeply sloped and previously disturbed settings, across a large percentage of the APE, indicated the potential for deeply buried deposits was nonexistent and did not require backhoe trenching.

Shovel tests within the APE revealed one predominant soil type, which was consistent with data received from the soil survey. The soils within the APE were dominated by sandy loam pertaining to the Silawa soil series. The soil contained a medium brown (10YR 3/3 and 4/2) that extended to a depth of 30 to 40 cmbs and were terminated due to notable disturbance near the existing retaining wall, the presences of culturally sterile nature, and vertical limits of the APE. In addition to excavating shovel tests, subsurface exposure including animal burrows, disturbed patches, and cutbanks along the creek were examined. Excavating shovel tests and visual inspections revealed that there are no soils suitable for containing deeply buried cultural material within the APE. No cultural resources were encountered within the APE.

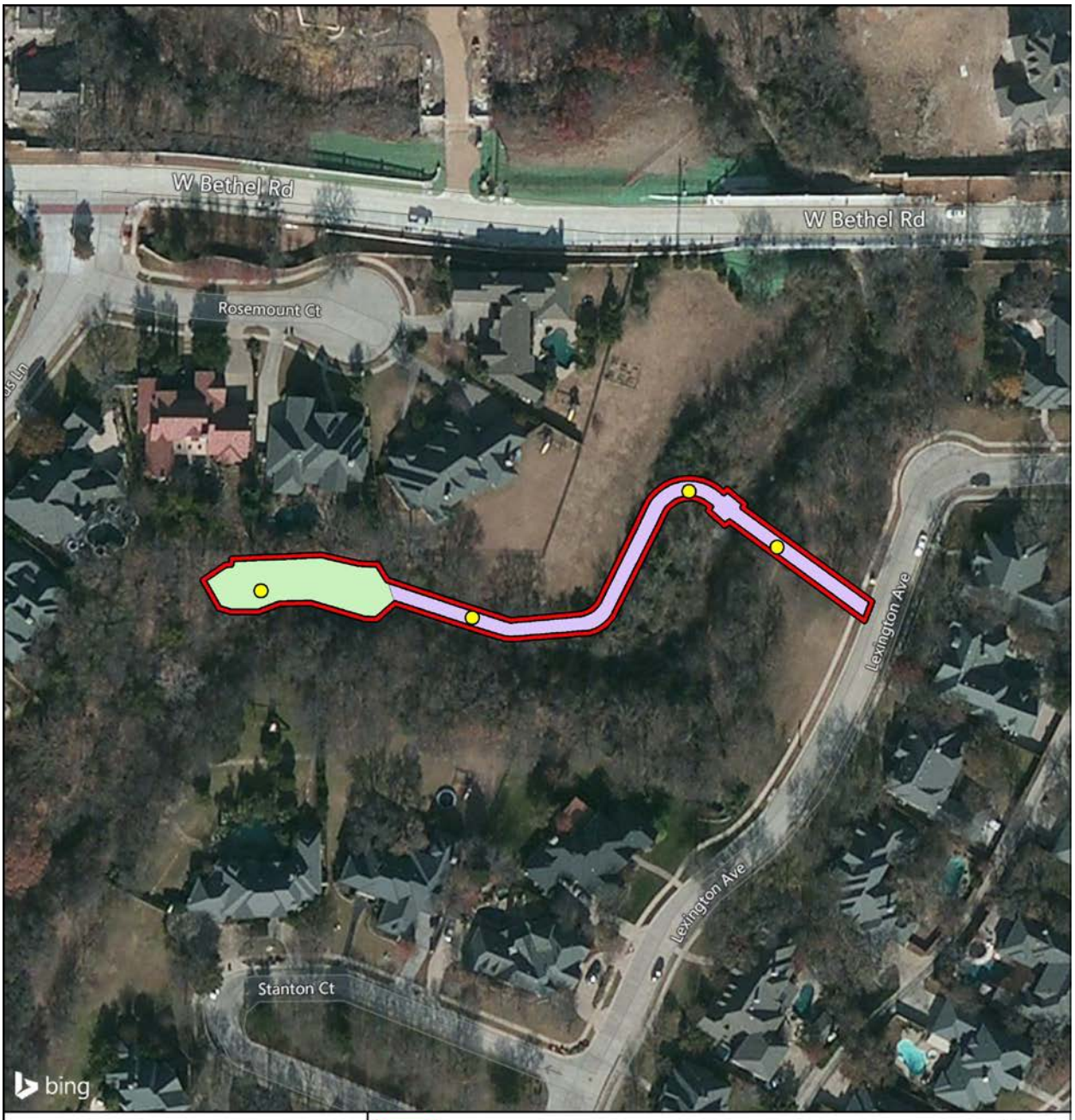

Figure 5.1
Shovel Test Location Map

County: Dallas
State: Texas
Date map created: 6/13/2017
Source: 2007 USDA
NRCS Digital Soils Database

Area of Potential Effects
Bank Stabilization Area
Temporary Access Road
Shovel Test Location

N
W E
S

1 inch = 100 feet

0 100 200 300 Feet

CHAPTER 6: SUMMARY AND RECOMMENDATIONS

During the archeological survey, four negative shovel tests were excavated within the 0.30 acre APE. Through the pedestrian survey and shovel testing, no cultural resources were encountered. Therefore, the City of Coppell is requesting concurrence for the APE and that no historic properties are affected under 36 CFR 800.4 (d)(1). It is the recommendation of IES that the THC concur with these findings and the Grapevine Creek Bank Stabilization Project be permitted to continue without the need for further cultural resource investigations. However, if any cultural resources are unearthed during construction, the operators should cease work immediately in that area, and the THC should be notified prior to resuming any construction activities.

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APPENDIX A
Photograph Location Map and General Photographs

Photograph 1

Photograph 2

Photograph 3

Photograph 4

Photograph 5

Photograph 6

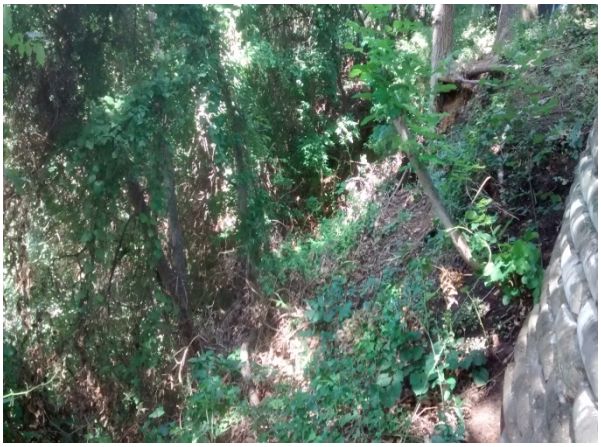
Photograph 7

Photograph 8

Photograph 9

Photograph 10

Photograph 11



Photograph 12

Photograph 13

Photograph 14

Photograph 15

Photograph 16

Photograph 17

Photograph 18

Photograph 19